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ARTZ & ARTZ, P.C. 28333 TELEGRAPH ROAD, SUITE 250 SOUTHFIELD, MI 48034				SY, MARIANO ONG
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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/708,675

Filing Date: March 18, 2004

Appellant(s): LU ET AL.

Attorney Kevin G. Mierzwa
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed March 16, 2006 appealing from the Office action mailed November 2, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is deficient. 37 CFR 41.37(c)(1)(v) requires the summary of claimed subject matter to include: (1) a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number, and to the drawing, if any, by reference characters and (2) for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters. The brief is deficient because on page 3, lines 3-5 of the Appeal Brief "paragraph 134" listed on all three lines should be --paragraph 135--.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 2002/0069006	Faye et al.	6-2002
US 6,449,542	Bottiger et al.	9-2002
US 5,452,982	Engle	9-1995
US 6,748,797	Breed et al.	6-2004
US 4,428,596	Bell et al.	1-1984
US 6,612,394	Wessman	9-2003
US 6,456,924	Schmitt et al.	9-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 2, 5, 9, 10, 13, 21, 22, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. (US 2002/0069006 A1) in view of Bottiger et al. (US 6,449,542) and in view of Engle (US 5,452,982).

Re-claims 1, 2, 5, 9, 10, and 13 Faye et al. disclosed, as shown in fig. 1-2, a system and method of controlling a vehicle with a trailer comprising: a vehicle velocity sensor; a steering wheel angle sensor; and a controller coupled to the velocity sensor and the steering sensor, said controller determine the vehicle velocity is above a velocity threshold and the steering wheel angle is zero, said controller apply brake-steer to the vehicle, see abstract.

However Faye et al. was silent to disclose means to determine the presence of the trailer; means to determine a rear axle side slip angle of the vehicle.

Engle teaches the use of a camera 70 to determine the presence of the trailer.

It would have been obvious to one of ordinary skill in the art to install a camera into the system of Faye et al., as taught by Engle, in order to ease alignment for hitch connection between of the tractor and the trailer.

Bottiger et al. teaches, as shown in fig. 1-3, means to determine a rear axle side slip angle of the vehicle, see col. 1, lines 47-67 and col. 2, lines 1-56.

It would have been obvious to one of ordinary skill in the art to have include a means to determine a rear axle side slip angle of the vehicle into the system of Faye et al., as taught by Bottiger et al., in order to maintain stability of the vehicle with the trailer.

Re-claims 21, 22, and 25 Faye et al. disclosed, as shown in fig. 1-2, method of controlling a vehicle with a trailer comprising: determining a vehicle velocity; determining a hand wheel position signal corresponding to an angle of the hand wheel angle position; determining a sensed yaw rate from a yaw rate sensor; calculating a yaw rate based on the hand wheel signal; applying brake-steer to the vehicle when the vehicle velocity is above a velocity threshold and the sensed yaw rate is diverging from the hand wheel yaw rate, see abstract.

However Faye et al. was silent to disclose determining the presence of the trailer; determining a rear axle side slip angle of the vehicle.

Engle teaches the use of a camera 70 to determine the presence of the trailer.

It would have been obvious to one of ordinary skill in the art to install a camera into the system of Faye et al., as taught by Engle, in order to ease alignment for hitch connection between the tractor and the trailer.

Bottiger et al. teaches, as shown in fig. 1-3, means to determine a rear axle side slip angle of the vehicle, see col. 1, lines 47-67 and col. 2, lines 1-56.

It would have been obvious to one of ordinary skill in the art to have include a means to determine a rear axle side slip angle of the vehicle into the system of Faye et al., as taught by Bottiger et al., in order to maintain stability of the vehicle with the trailer.

5. Claims 3, 4, 11, 12, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. in view of Bottiger et al. and Engle as applied to claims 1, 9, and 21 above, and further in view of Breed et al. (US 6,748,797).

Re-claims 3, 4, 11, 12, 23, and 24 Faye et al. as modified failed to disclose means to determine the presence of a trailer comprises a reverse aid sensor or an ultrasonic sensor.

Breed et al. teaches the use of several types of sensors used in vehicle such as camera, radar, rear, and vision sensors, see col. 23, lines 44-53.

It would have been obvious to one of ordinary skill in the art to install a reverse aid sensor or an ultrasonic sensor into the system of Faye et al. as modified, in view of the teaching of Breed et al., as a matter of choice of sensors that have the same function of ease alignment for hitch connection between the tractor and the trailer.

6. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. in view of Bottiger et al. and Engle as applied to claim 1 above, and further in view of Bell et al. (US 4,428,596).

Re-claims 6 and 7 Faye et al. failed to disclose wherein determining the presence of a trailer comprises detecting a locating plate with a locating hole positioned along a trailer tongue behind the vehicle.

Bell et al. teaches, as shown in fig. 1-3, a locating plate with a locating hole positioned along a trailer tongue behind the vehicle.

It would have been obvious to one of ordinary skill in the art to have install a locating plate with a locating hole positioned along a trailer tongue behind the vehicle of Faye et al. as modified, in view of the teaching of Bell et al., in order to ease alignment for hitch connection between the tractor and the trailer.

7. Claims 8, 15, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. in view of Bottiger et al. and Engle as applied to claims 1, 9, and 21 above, and further in view of Wessman (US 6,612,394).

Re-claims 8, 15, and 26 Faye et al. as modified failed to disclose wherein applying brake-steer comprises applying at least one brake at a first wheel to reduce a vehicle turning radius.

Wessman teaches apply brake-steer by applying at least one brake at a first wheel to reduce a vehicle turning radius, see abstract.

It would have been obvious to one of ordinary skill in the art to apply brake-steer by applying at least one brake at a first wheel to reduce a vehicle turning radius into the system of Faye et al. as modified, in view of the teaching of Wessman, in order to maintain stability of a vehicle during turning.

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. in view of Bottiger et al. and Engle as applied to claim 9 above, and further in view of Schmitt et al. (US 6,456,924).

Re-claim 16 Faye et al. as modified failed to disclose wherein the controller programmed to brake-steer by applying an increased drive torque to a second wheel relative to a first wheel.

Schmitt et al. teaches controller programmed to brake-steer by applying an increased drive torque to a second wheel relative to a first wheel.

It would have been obvious to one of ordinary skill in the art to utilize the known teaching of the controller programmed to brake-steer by applying an increased drive torque to a second wheel relative to a first wheel in the system of Faye et al. as modified, as taught by Schmitt et al., in order to improve vehicle's stability during turning.

9. Claims 17-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

(10) Response to Argument

A. With respect to Appellant's claims 1 and 9 on page 5 of the Appeal Brief, Appellant argued that "Bottiger reference has nothing to do with trailering of a vehicle and therefore not properly combinable with the Faye reference. Also, the Bottiger reference does not teach or suggest applying brake-steer when the rear axle slip angle is above predetermined slip angle, the vehicle velocity is above a vehicle velocity threshold, and the vehicle steering wheel angle is about zero".

Faye '006 reference disclosed a tractor-trailer combination, and also disclosed "Wheel force quantities describing forces acting on individual wheels are determined. Slip angle quantities describing slip angle of the individual wheels are determined. The wheel force quantities and slip angle quantities are determined at least as a function of the transverse acceleration, yaw rate, the steering angle, and vehicle velocity" on page 4, par. [0045].

In claim 1, line 5 and claim 9, line 7 of applicant's claimed invention recited "determining a rear axle side slip angle of the vehicle" and does not require determining rear axle side slip angle of the trailer.

Examiner maintains that Bottiger reference is mainly used for the teaching of rear axle sideslip angle of a non-steered rear wheels of a vehicle and applying brake steer which clearly disclosed in the abstract, col. 3, lines 48-54, col. 4, lines 4-14, and fig. 2. One of ordinary skill in the art would have applied Bottiger's teaching of determining a rear axle side slip angle and applying brake steer, in order to maintain stability of the vehicle with the trailer of Faye.

Faye do inherently disclosed "means to determine the presence of the trailer" on page 2, par. [0021] wherein continuously receiving data from the trailer thus inherently detects the presence of the trailer.

However Examiner uses the teaching of Engle '982 reference to further show the evidence of directly detecting the presence of the trailer.

B. With respect to Appellant's claim 21 which is similar to claim 1 on pages 5-6 of the Appeal Brief, Appellant argued that "No teaching or suggestion is found in any of the references for determining the divergence of the sensor yaw rate and hand wheel yaw rate".

Faye '006 reference clearly disclosed determining the divergence of sensor yaw rate and hand wheel yaw rate in figure 2, par. [0038], par. [0041], and par. [0061]; wherein omega_{ist} yaw rate of the tractor determined by using a yaw rate sensor; delta_{ist} hand wheel yaw rate detected by the steering angle sensor and velocity quantity v_f are supplied to a determining arrangement 302, characteristic quantity omega_{solld} is supplied from adjusting arrangement 504 to subtracting arrangement 505, and the system deviation delta_{omega} for the yaw rate is determined using subtracting arrangement 505.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

John M. Sy

May 25, 2006

Conferees:

James McClellan (SPE) *J*

Robert Siconolfi *RS*

Mariano Sy *Mariano Sy*